



Neville, P., McNally, L., & Waylen, A. (2018). Developing a Dental Scrubs Ceremony to define professional identity and teach professionalism to dental undergraduates; lessons learned. *European Journal of Dental Education*, 22(3), e542-e554.
<https://doi.org/10.1111/eje.12351>

Peer reviewed version

Link to published version (if available):
[10.1111/eje.12351](https://doi.org/10.1111/eje.12351)

[Link to publication record in Explore Bristol Research](#)
PDF-document

This is the author accepted manuscript (AAM). The final published version (version of record) is available online via Wiley at <https://onlinelibrary.wiley.com/doi/10.1111/eje.12351>. Please refer to any applicable terms of use of the publisher.

University of Bristol - Explore Bristol Research

General rights

This document is made available in accordance with publisher policies. Please cite only the published version using the reference above. Full terms of use are available:
<http://www.bristol.ac.uk/red/research-policy/pure/user-guides/ebr-terms/>

Title: Developing a Dental Scrubs Ceremony to define professional identity and teach professionalism to dental undergraduates; lessons learned’.

Running title: Developing a Dental Scrubs Ceremony

Authors:

Patricia Neville

Lecturer in Social Sciences,

Bristol Dental School,

Lower Maudlin Street,

University of Bristol

BS1 2LY

UK

Lisa McNally

Senior Clinical Lecturer in Oral & Dental Sciences

Bristol Dental School,

Lower Maudlin Street,

University of Bristol

BS1 2LY

UK

Andrea Waylen

Senior Lecturer in Social Sciences,

Bristol Dental School,

Lower Maudlin Street,

University of Bristol

BS1 2LY

UK

Key words:

Professional Identity

Professionalism

Dental Scrubs Ceremony

Teaching evaluation

Abstract

Introduction: The UK General Dental Council stipulates that professionalism is a key aspect of the teaching and training of dental students. However, dental educators highlight that teaching dental student's professionalism can be challenging and students often rate this teaching activity negatively. This article documents a teaching initiative at one UK Dental School that aimed to strengthen the professionalism curriculum by introducing a Scrubs Ceremony for second year students.

Materials and method: The Dental Scrubs Ceremony is inspired by the White Coat ceremonies that medical students have in universities in North America. It marks the students' first step in their professional and clinical development, with the signing of a pledge of conduct and public presentation of dental scrubs to each student. We report student feedback questionnaire data over a three-year period together with reflections on the merits and limitations of this alternative approach to teaching professionalism.

Results: Student evaluation data shows that the perceived usefulness and worthwhileness of a Dental Scrubs Ceremony has grown since its inception in 2015. Most students enjoyed the symbolism of the ceremony, receiving their dental scrubs in a formal event. However, there was mixed evaluation for its effectiveness to teach professionalism.

Conclusion: A Dental Scrubs Ceremony is a useful addition to the formal curriculum of professionalism in a dental school. It provides dental students with an opportunity to be inducted into the dental profession as novice dental students starting out on their professional career.

Introduction

Professionalism is an integral part of professional and clinical programmes, but academics highlight its complex and multifaceted nature, describing it as a concept (a set of norms, behaviours and values),¹ a competency² or a "special form of personal and professional formation rather than as a series of learning"³. In the UK, the regulatory body of the General Dental Council (GDC) recognises professionalism as one of the four key learning domains for registrants, alongside clinical, communication and management and leadership domains.⁴ The GDC provides a working definition of professionalism comprising four categories (and 20 learning outcomes): being professional towards patients and the public, being mindful of ethical and legal issues, being an effective team worker and promoting self-development and development of others (Outcomes 6 to 9).⁴ Professionalism is also recognised as one of the four domains (Domain I) by the Association of Dental Educators in Europe (ADEE) essential to dental education. It lists three key competences associated with professionalism: Ethics, Regulation and Professional Behaviour⁵.

One aspect of our role as dental educators is to support and encourage students to develop these desired norms, values and behaviours so they can demonstrate professional competencies in their working environment and clinical practice. Although scholarship in medical education has made significant inroads in the teaching and assessment of medical professionalism⁶ there is no shared definition of professionalism² for medics and dentists. There are few high quality empirical studies on its teaching, learning and assessment and associated issues and challenges in dental education^{7,8} and so many dental teaching innovations are inspired by initiatives developed primarily for medics.²

This study details one such example of taking an innovative approach to the teaching of medical professionalism - the White Coat Ceremony (WCC)^{9 10} - and adapting it for delivery in a dental programme. The White Coat ceremony is intended 'to welcome new students into the medical profession and to set clear expectations regarding their primary role as physicians by professing an oath'.¹¹ WCCs include three key elements – 1) students recite either the Hippocratic oath or one produced by their Medical School in front of witnesses, including parents 2) a keynote address by an eminent role model and 3) the cloaking of the students followed by a celebratory reception.¹¹ An essential element of the ceremony is the history and meaning of the white coat as a symbol that the wearer has been trained to care.¹² In 2016 WCCs were held in 97% of medical schools in the US and Canada¹¹ and they are also conducted in Pharmacy and Medical schools around the world, including Israel¹³, Europe, Japan, Kenya and Pakistan.¹⁴

WCCs are conceived as helping the professional identity formation of neophyte healthcare professionals and aiding their transition from the pre-clinical to clinical stage of their studies. Having a professional self-identity is a known building block for one's professional development, and underestimating this, or not encouraging it or denying it will impede the student's transition from student to a professional.¹⁵

Teaching professionalism and White Coat Ceremonies: a background note

Traditionally, the priority of medical education has been the development of technical skills and cognitive expertise.¹⁶ With regard to professionalism, there has been a similar focus on that which is observable, measurable and behavioural. This behaviourist approach to teaching professionalism typically relies on role models¹⁷ and a set of 'rules' to instruct students on what constitutes professional and unprofessional behaviour³. There are potential dangers with using role models, especially if they are found to act unprofessionally. When students observe unprofessional behaviour among Faculty it not only breeds cynicism,¹³ but also has a negative impact on the teaching of professionalism by souring the learning environment.¹⁸ Similarly, the 'rule based [model of] professionalism'³ allows professionalism to be assessed via students' visible and measurable behaviour but notes that assessing students' attitudes and values can be more difficult. Students tend to associate professionalism with a set of practices or rules with which they must comply and enact.¹⁹ This approach to teaching and learning professionalism has come in for criticism of late due to its passive construction of the learner and its compartmentalised approach to teaching.³ Further limitations include the fact that an individual may act professionally (i.e. enact the desired behaviours) without having professional attitudes, beliefs and values.²⁰ Overall, by reducing professionalism to only its behavioural component, it is translated into something to be regulated and surveyed rather than becoming part of an individual's identity.³

More recently, there have been calls to redress this imbalance and refocus on the values and attitudes of student professionals, in particular the role that identity and 'personal formation' plays in professional development and behaviour.^{16 21 22 23} This can be defined as: 'the moral and professional development of students, the integration of their individual maturation with growth in clinical competency, and their ability to stay true to values which are both personal and core values to the profession'.¹⁶ This theme of professional identity formation has become an emerging issue in healthcare disciplines such as physiotherapy,²⁴ nursing,²⁵ medicine^{26 27} and pharmacy²⁸ to name a few. Less research has been conducted on the professional identity of dentists, with the exception of the early work of Sherlock and Morris²⁹, Eli and Shuval³⁰ and Eli³¹ and some work on the identity formation of dental hygienists.³²

The White Coat Ceremony offers students an opportunity to 'learn the meaning of responsibility that comes with wearing the white coat, the expectations for humanism and professionalism'.³³

While this aspiration is difficult to deny, there are two divergent perspectives about the value of the WCC as a method of teaching professionalism within the literature. Some commentators find the WCC fulfils a largely symbolic function in the teaching of professionalism, acting as a useful 'rite of passages, welcoming the new medical student into the medical profession, albeit as an apprentice member'.³⁴ By reiterating the 'altruistic value'¹² of the white coat it becomes a symbol and marker of professional progression. Others critique WCCs for their overly social and dramatic focus, at the expense of demonstrating and delivering on the ethical and moral aspects of professionalism.³⁵ WCCs may be considered to encourage a superficial understanding of professionalism, where pledge-taking is seen as a shallow public exercise, without the opportunity to explore or interrogate the implications of the same.³⁵ They may also be considered misleading and ironic symbols of professionalism given that white coats also symbolise the cultural authority of physicians³⁶ and validate and perpetuate the 'caregiving hierarchies and spheres of practice, the social and economic privilege of physicians'.¹²

Despite this academic debate few studies have formally evaluated the educational value of WCC. One study surveyed attendees at a WCC but only invited students to record a) what they 'valued' about the ceremony and b) suggested improvements. Unsurprisingly, the respondents valued the symbolic nature of the event but provided little critical assessment. However, they did highlight the benefit of having discussion of the symbol of the white coat as an improvement to the format.³⁷

The aim of this study was to detail the development, design and implementation of a Dental Scrubs Ceremony (DSC) in one UK dental school over a three year period. In our School professionalism is taught as part of a core theme of the curriculum, running from Year 1 to 5. All topics are aligned with the GDC's⁴ Preparing for Practice learning outcomes and professionalism is taught through lectures, online e-lectures, small group teaching and communication role-play. Professionalism is formatively assessed through in-class participation, self-assessment quizzes and peer and staff feedback in the communication role-play sessions. Student professionalism is summatively assessed by clinical supervisors (student case notes and supervisor feedback are recorded in an e-portfolio) and their performance is graded from A to E. Students who receive Ds and Es are discussed at Progress Committee where appropriate actions are decided upon. Professionalism is also summatively assessed in scheduled, knowledge based, written PPD assessments.

In this paper we discuss the pedagogic value of this approach to teaching professionalism and include student evaluations of their Scrubs Ceremony; we also assess the effectiveness of the Scrubs Ceremony as a means of teaching professionalism to dental students.

Methods and Materials

Development of the Dental Scrubs Ceremony model 2015-2016

Although there was no evidence of dissatisfaction with how professionalism was delivered in the undergraduate programme prior to 2015, two events occurred in 2014-5 that precipitated the development of the Scrubs Ceremony (SC). These were 1) the establishment of a Faculty of Health Sciences "Professionalism Journals Club" which introduced the authors to a range of research articles on professionalism and the concept of a WCC and 2) a reported incident relating to a single year cohort that prompted a complaint about unprofessional behaviour during their NHS induction

training. Students were reported to have openly used their mobile phones during their training, turned their backs on the speaker and talked among themselves while the training was ongoing. This incident highlighted a perceived immaturity among the cohort and suggested that the students had a low sense of professional identity and expectations in this context. A working group was set up, including both authors (PN and AW) and the Clinical Dean (LMcN), with the task of revising how professionalism was taught in our undergraduate programme. We contended that students would benefit from a formal event or ceremony to mark their transition from 'students' to 'student professionals'. We agreed that going onto clinic and meeting patients for the first time could be construed as a key transitional point or 'rite of passage' in student professional development and be appropriately marked with a ceremony to this effect.³⁷ In our dental programme, students do not meet their first patients until the second half of Year 2.

We consulted the concept of the WCC and modified its structure so that it became more dentally focused. These modifications included:

1) Changing the symbolic focus of the ceremony to dental scrubs. Although dental scrubs do not have the rich symbolism of the white coat of medicine¹² they are an acknowledged uniform of the healthcare workforce³⁸ and are, therefore, a meaningful symbol of professional identity. Dental scrubs denote the existence of a symbolic boundary by signalling the difference between them and other non-clinical students. They may also forge a sense of community by encouraging the wearer to identify with their fellow classmates and this is further reinforced on clinic because each year group wears a different colour.^{37 39} The event was named a Dental Scrubs Ceremony with the opening section of the ceremony discussing the personal and professional significance of dental scrubs, as well as their significance from a patient's perspective.

2) Incorporating an educational element to the ceremony. WCC's have been criticised as a missed opportunity for exploring the issues related to professionalism.³⁵ This, in conjunction with the fact that WCC's have not been widely evaluated, convinced us to expand the educational content and evaluate this teaching initiative. Our educational aims were to:

1. introduce students to the concept of professionalism
2. provide guidance and information to Year 2 students as they transition into their clinical training
3. offer an occasion where students can publicly declare their commitment to patient-centred care and professional behaviour

The objectives of this initiative were to:

1. provide an opportunity for dental students to reflect upon and acknowledge their responsibilities as dental students
2. provide an opportunity to publicly assume such obligations by signing a pledge of conduct
3. underline the respect and trust of the public for the profession
4. remind students of the vocational aspects of their work.

In 2015 we designed our pilot Dental Scrubs Ceremony (DSC) as a two hour interactive seminar (see Figure 1) where speakers were invited to cover four distinct topics: an introduction to dental professionalism, an outline of the student code of conduct, discussion of social media and its

implications for professionalism, and a review of the dress policy of the local NHS Hospital Trust. These topics were agreed by the working group as important to discuss with students before they met their first patients. The authors designed the content of the pilot and facilitated the activities. Student and staff feedback from the DSC was collected and led to improved iterations of the DSC in 2016 and 2017 (Figure 2).

Course Evaluation Survey

A pen and paper evaluation survey was completed by students who attended the 2015-16 pilot DSC (Appendix A). The survey contained both closed and open questions and invited students to share their opinion on the quality and clarity of the speakers, the activities of the seminar and the content of the scrubs ceremony. The pre-coded closed questions included: "How would you rate the dental scrubs ceremony overall?", "To what extent was attending the dental scrubs ceremony worth your time?", "How much of the content did you already know"? "To what extent has the dental scrubs ceremony helped you learn about dental professionalism/student code of conduct/ digital professionalism and UH Bristol dress policy" and "To what extent do you think you will apply the information presented in the dental scrubs ceremony in your day-to-day practice"? Likert-scale responses to these questions took one of three forms: "Poor," "OK," "Good," "Very good" and "Excellent" response options; "Not at all", "Slightly worthwhile", "Moderately worthwhile", "Very worthwhile" and "Extremely worthwhile" response or "None", "A little", "A bit", "Quite a bit", "Most of it" respectively. No identifying data are included in these evaluation forms and so student anonymity is assured.

The evaluation data were supplemented by collecting follow-up student responses on the influence of the DSC to their professionalism around four months later in the "End of teaching unit" feedback form. These data allowed us to assess whether the DSC had any ongoing impact on student understanding of professional identity and professionalism. All student data were collected for educational purposes, to inform the development of the teaching initiative, and so our study was exempt from the need to seek ethical approval by the University of Bristol Faculty of Health Sciences Ethics Board (personal email communication from the Chair of the Faculty Ethics Committee). With respect to searching Facebook for the social media profiles of each student (see below for the 2016-2017 model) we followed the Code of Ethics and Conduct published by the British Psychological Society and looked only at the front page of Facebook that came up in an online search – a situation that might "reasonably be expected to be observed by strangers....in a public space".⁴⁰

Development of the Dental Scrubs Ceremony model 2016-2017

We modified both the structure and content of the scrubs ceremony in light of the pilot findings. Timekeeping was a major issue and more planning went into the structure of the event to ensure that the ceremony did not run over its allocated time. Furthermore, there was more involvement from Faculty members in the subsequent ceremonies so that the presentation style became more interactive and engaging.

One key speaker wanted to encourage students to think of their clinical role from the perspective of the patient and the trust that s/he gives to health care professionals. This presentation about 'Professionalism as a gift' used a variety of props (e.g. cardboard box, ribbons, scissors etc) to convey the clinical role as receiving the trust of the public (the gift), facing challenges (trying to untie the knots in the ribbon tied around the gift), being a team member (needing the help of the person with the scissors) and needing to reflect upon one's attitudes, beliefs and activities (the actual "gift" was

a mirror). Likewise, the discussion of social media and professionalism moved from a didactic talk to one that foregrounded the students' own social media presence, by presenting each student with the results of a social media search carried out on each one of them by a staff member (see Figure 2).

Facebook pages for each student were sought and the front page only of each profile was printed off. The printed copy of each student's Facebook page was put into a brown envelope and given to each student during the seminar before the scrubs ceremony. Students were told beforehand what was in the envelope to ensure that they were provided with "adequate assistance in understanding the nature and contents of the information being disclosed".⁴⁰

Finally, pilot feedback suggested that the delivery of the code of conduct that students were asked to sign was unengaging. Consequently, we changed it into an active learning experience, by presenting students with a series of situational judgement questions, highlighting common issues with working on clinic (e.g. dealing with a late colleague who is late for clinic or a colleague who is gossiping about work outside the hospital). Students were encouraged to think-pair-share their response to the questions.

A condensed version of the student evaluation survey used in 2015/2016 was administered in 2017 after modification based on feedback and examination of the data collected. As a result, some of the 2017 student evaluation data will be presented in separate tables as it differs from the previous data set.

Data Analysis

Closed questions were analysed numerically and proportions are reported for responses to individual items. Open questions were analysed qualitatively, using thematic analysis. Change in student response in the 2016 and 2017 surveys was used to evaluate whether the teaching initiative achieved its learning outcomes as well as highlighting areas for improvement.

Results

Response rates for the evaluation surveys were very high (98.6% in 2015-16, 93% in 2016-17 and 100% in 2017-18) and therefore are representative of each Year 2 cohort.

Dental Scrubs Ceremony Pilot: 2015-16

(a) Quantitative data

The main purpose of the pilot was to establish if the DSC achieved its objectives, namely that it provided students with an introduction to the concept of professionalism, an opportunity to reflect on their responsibilities as dental students, remind them of the vocational aspect of their work, and the role of trust and respect in professionalism. Tables 1 and 2 present summary findings of the student feedback collected after the ceremony. Most students considered the scrubs ceremony to be 'okay' overall (47.2%), followed by 'good' (34.7%). In 2015-16 most students considered the ceremony to be 'slightly worthwhile' (51.4%).

As Figure 2 outlines, the content of the dental scrubs ceremony pilot encompasses four substantive topics. Of these four topics, the one that students had no prior knowledge of was the dress policy of University Hospital (UH) Bristol (16.7%). The largest proportion of students already had 'a little knowledge' of dental professionalism (43.2%) and the student code of conduct (32.4%). Most students claimed to have 'quite a bit' of knowledge about digital professionalism (32.4 %) (Table 3).

After the ceremony, 24.3% of students reported to have 'learned quite a bit' about dental professionalism and 34.3% about the student code of conduct. Almost 33% of students 'learned some information' about the UH Bristol dress code and 24.7% 'learned a little' about digital professionalism. (Table 4)

On the question of whether the contents of the scrubs ceremony could be applied to their day-to-day -practice, 35.6 % of students reported that the information presented in the dental scrubs ceremony would help them 'quite a bit'. A further 24.7% felt that it would help them 'a lot' in their day-to-day practice, 23.3% found it to be of 'some' use, while 13.8% thought it to be 'a little bit' of use.

Overall, 60.9% of students believed that the DSC was a relevant event (see Table 4). Fifty percent of the students felt that the event should be repeated next year, 32.4% were undecided, and a further 17.6% disagreed with the idea.

(b) Qualitative data

Four broad themes emerged from the qualitative analysis of the open text questions. These include: 1) Scrubs ceremony as a positive initiative 2) identifying the distinction between the educational and symbolic function for the ceremony 3) differentiating between the symbolic and practice aspects of dental scrubs and 4) areas in need of improvement.

Theme 1: Scrubs ceremony as a positive initiative

Many students expressed the opinion that a DSC was a useful initiative. Most of these positive comments underlined the symbolic appeal of the ceremony, recognising it as a ritual marking their transition to the clinical phase of their studies.

"Scrubs ceremony provided a good and clear introduction of the transition from student to dental student" (#23)

"nice tradition" (#12)

"sense of accomplishment and progress" (#11)

The event also helped students recognise their new role and responsibilities.

"Helpful, informative and necessary" (#48)

"Good to mark the tradition and ensure that we are well informed" (#53)

"Marks the clinical transition-makes students aware of new responsibilities: expected behaviours" (#51)

Theme 2: Distinguishing between the educational and symbolic function of the ceremony

Although students responded positively to the symbolism of the ceremony, many felt that the symbolic rite was more important than attaining any specific learning outcome.

"The scrubs ceremony should maybe be just the pledge and the scrubs. This keeps it quite fun. The other info (sic) could be given in a separate lecture or made easily assessable on blackboard" (#1)

"handing out of scrubs was good, talk too long" (#49)

Theme 3: Differentiating between the symbolic and practical aspects of dental scrubs

Of all the topics covered by the ceremony, students appeared to be particularly concerned by the hospital dress code. Many identified this as the most important aspect of the ceremony and would have preferred more time dedicated to it.

“Needed more advice on uniform regulation”(#5)

“Dress code could have been covered in more detail”(#54)

“Good concept, spend less time on professionalism more on dress code, more interactive activities. Don’t over run”(#28)

Many of these responses focused on specific gaps in students’ knowledge- the type of shoes allowed on clinic, or whether facial hair was allowed, for instance. By prioritising the official dress code in this way, the dental students appear to have missed, obscured or dismissed the “professional” intention of the DSC in general.

“More emphasis on dress code and mandatory rules rather than the meaning of scrubs” (#43)

“Better timing and more info(sic) on uniform instead of what scrubs mean” (#46)

“Spent too much time talking about the significance of scrubs” (#52)

In this respect, student appear to have compartmentalised the meaning of dental scrubs away from the dress code.

Theme 4: Logistics and time management issues

There was overwhelming consensus among the qualitative responses that the ceremony was too long and overran its 2 hours slot.

“It’s a nice idea but very drawn out” (#44).

“Be shorter and more concise for next year” (#55)

Interestingly, most of the students suggested that less time could have been spent on the student code of conduct.

“Should not go through each clause of the [code of] conduct - maybe email it out beforehand so people can read it in own time” (#58)

“Really enjoyed receiving the scrubs. Slightly repetitive information. Going over contract values took too long. Timing of event too long” (#5).

(c) Usefulness of scrubs ceremony: end of term evaluation

We were also interested in recording the effectiveness of the DSC as a vehicle for learning about professionalism in the medium to long term. At follow-up, 31.6% of students felt that the DSC was of ‘little use’ , 26.3% felt it was ‘quite useful’ and 21.1% said it was of ‘no use’.

Dental scrubs ceremony: 2016-17

(a)Quantitative data

Overall findings for the 2016-17 evaluation survey reported an increase in satisfaction with the ceremony. The majority rated the scrubs ceremony to be 'good' (50.8%) with most feeling that it was 'moderately worthwhile' (44.4%). Around 22% of students rated it to be 'very good' (see Table 1). Similar to the previous year, 2016-17 students reported that they had previous knowledge of all the topics being discussed during the scrubs ceremony, however, on this occasion, the largest proportion had 'quite a bit' of knowledge about professionalism (36.7%), student code of conduct (44.4%) and social media and professionalism (39.7%)(Table 3). Despite this, most students learned 'some new information' about professionalism (54%) and student code of conduct (54%) from the DSC (Table 4). The largest gain was in the topic of social media and professionalism, with 33.4% claiming to have learned 'some' new information' and a further 36.5% having learned 'quite a bit' (Table 4).

As with the previous cohort, most students felt that they would use this information in everyday practice, with 36.5% claiming the material to be 'quite a bit' useful to them and 33.3% finding it to be and 'a lot' useful.

Support for the ceremony to be repeated for the following year's cohort rose to 55.6%, a slight increase on the 2015 score. Sixteen percent of students believed it should not be run again and 28.6% were undecided.

Immediately after the DSC in 2016-17, students were asked to rate the usefulness of the ceremony. Almost 70% of students rated it as useful but at follow-up this proportion reduced with 29% of students finding the DSC to be of 'some use'.

(b) Qualitative data

Similar qualitative themes emerged from the open text questions: that the scrubs ceremony was a positive and enjoyable experience (e.g. "Cool event" (#21)); the recommendation for a shorter ceremony (e.g. "A shorter more concise ceremony" (#41)). Again, a few students expressed the opinion that the scrubs giving should be separated from its formal learning component (e.g. "but less lectures-just ceremony + pictures" (#43))

Dental scrubs ceremony: 2017-18

As no substantive issues for improvement were highlighted in the students' feedback the format of the 2017-18 scrubs ceremony stayed the same as in 2016-17. Student evaluations for the DSC continued on a positive note (Table 1): 100% of the students rated the ceremony as 'very good'. The usefulness of the ceremony was also positively endorsed with 10% saying it was excellent, 48% 'very good' and 25% 'good'. A sizeable proportion of respondents (42%) already knew "quite a bit" of the content (Table 5). Again, the topic that students felt they learned the most about was that of social media and professionalism (51%) (Table 6).

Sixty percent of students rated the DSC as useful immediately after the ceremony in 2017. However, at follow-up only 32% felt that it was of some use. (The response rate for 2017 was the lowest for the three year period at 77.3% (Table 7)).

Discussion

The education literature endorses the value of professional identity formation for medical undergraduates^{41 42 43 20} but this topic has been under-developed in dental education.^{44 45 46 21} We believe that professionalism teaching should allow for opportunities where the professional identity

formation of dental students can be addressed and facilitated. Our study represents a teaching initiative whose aim is to provide pre-clinical dental students with an event where they can reflect on their imminent transition to the clinical aspect of their studies and their ensuing role-change and responsibilities. We took the popular format of WCC in medical education and modified it for a dental context, focusing on the symbol of the dental scrubs as an emblem of professionalism as well as marker of professional identity. In this way we created a rite of passage through which dental students become inducted into the dental profession. This community building focus is also achieved by the students signing a pledge of conduct, in the company of staff members.

Student evaluation data shows that the perceived usefulness and worth of a DSC has grown since its inception in 2015-16. Changes made to the content and delivery of the material in response to student feedback, including asking clinical teachers to discuss pertinent professionalism issues and more personalised learning activities, contributed to the effectiveness of the teaching initiative. Although students responded positively to the value and symbolism of dental scrubs as a means of engaging their interest in dental professionalism, they were more interested in the practical issues around hospital dress code as well as learning how to be safe/professional with their online platforms.

The DSC deviates from the WCC format by introducing some additional learning points and activities around professionalism, ethical behaviours and social media practices. In this way it endeavours to reflect the multi-dimensionality of professionalism with knowledge, behavioural, attitudinal and normative facets. Students expressed a certain sense of dissonance about the relationship between the symbolic and educational components of the ceremony in the qualitative feedback. Some reported that the DSC should only focus on the symbolic dimension of professionalism (i.e. the wearing of dental scrubs), with other topics more suitable for lecture or classroom discussions. This perceived lack of value for the introduction of professionalism to pre-clinical students is echoed in the decline of perceived usefulness of the DSC as the teaching term progresses (Table 7).

It is important to reflect on this sense of dissonance about the role and value of the DSC from the student's perspective. For instance, it could be related to a lack of student engagement or involvement in the design of the contents of the DSC. However, students were given the opportunity to express their opinions and/or recommendations for additional content topics as an open text box question, in the paper and pen evaluation survey. No suggestions for new or additional content was made by the students there, only reflections on the current content of the DSC and pragmatic suggestions to improving the format, e.g. to shorten some sections, or expand others etc. All recommendations were taken on board and implemented in subsequent iterations of the DSC.

It could also be argued that the reasons the students preferred the uniform policy and receiving the scrubs aspects of the DSC is because they represent half of the topics covered and were reinforced in the DSC. However, students expressed greater concern with the dental hospital's official dress policy rather than an interest in the meaning of scrubs as professional attire and the values of professionalism more generally. This is in keeping with Dreyfus's⁴⁷ novice stage of professional development, where students operate from a literal understanding of rules and regulations and confirms the earlier point that many healthcare students interpret professionalism as compliance to a set of observable rules and behaviours, rather than the acceptance of core values or attitudes.³ As a result, this partial acceptance of the objectives of the DSC is in keeping with students' particular stage of professional development.⁴⁸

Students responded to the objectives of the DSC in the short term. However, doubt was cast over the relevance and effectiveness of the DSC as they moved on with their studies. This was a

disappointing finding as we felt that the DSC presented professionalism in a positive light, rather than dwelling on examples of unprofessionalism to teach professionalism.⁸ We can interpret this finding as a suggestion that the DSC works best as a 'trigger' for the neophyte professional to think about their professional self-identity, providing an opportunity to identify and reflect upon their new role. However, the ability of the DSC to deliver educational objectives is less certain. Although students acknowledged that the material was relevant to them and their daily practice, many reported that they knew it already. Professional students often approach the teaching of professionalism with a sense of resistance and ambivalence.⁴⁹ In this regard, the mixed evaluation for the educational component of the DSC is in keeping with trends observed in medical education.

Despite this observation, we believe that it is worthwhile retaining the educational aspect of the DSC, pending ongoing student evaluations and staff reflections. If this was the only place in the curriculum when students were taught about professionalism, then student evaluation would force us to remove and teach it elsewhere in the curriculum.^{50 51} However, the DSC is simply the first formal occasion where dental professionalism is discussed with the students: there is an ongoing range of teaching activities and learning opportunities throughout the rest of the programme, in keeping with the recommendation that professionalism be taught in a variety of diverse ways⁵².

It is widely acknowledged that it can be difficult to integrate professionalism into a curriculum.⁸ The key to teaching professionalism is for the curriculum to be as 'integrated and coherent' as possible,⁵² within the educational programme and institutionally.⁵³ The authors, as members of the academic teaching team, endeavour to ensure that the teaching and learning of professionalism is vertically and horizontally integrated in the undergraduate curriculum. The DSC was designed to set out the expectations our dental school had for its second year students and to make "the commitment to professionalism explicit"⁸. However, it is also important for the school and faculty to support this initiative.^{17 53} This support was evidenced by the decision of our Departmental Teaching and Education Committees to accept our pilot proposal in the first instance and then by the ratification of the decision to include the DSC as part of the formal curriculum after evaluation of the pilot study. Our Head of School and Director of Education also show their support by being present at the ceremony itself. Administrative support is also critical - one of our undergraduate Administrators orders the scrubs and oversees their distribution on the day.

However, it is worth noting the low staff turnout for the DSC. Though some faculty excused themselves from the ceremony because of their clinical commitments, apologies were not received from everyone. The lack of faculty support on the day of the DSC was disappointing as it detracted from the sense of professional 'community' that the DSC is trying to instil among dental students. More fundamentally, if the DSC represents the School's "threshold standard"⁸ of professionalism expected of its incoming clinical students, then current faculty do not match up with their professional behaviour. The only way in which institutions can promote professionalism is by role-modelling it themselves, by visibly supporting such teaching initiatives and timetabling staff to attend the DSC.

With respect to future studies on this topic, we acknowledge that more research needs to be conducted into the teaching and learning of dental professionals. Generational differences separate current undergraduates and Faculty.⁵⁴ We need to be cognisant of the different learning styles and expectations of our current undergraduates and how this might impact on how we teach professionalism. As 'generation Z' these students show a preference for teaching and learning that is entertaining, imaginative, playful and visual.⁵⁵ They are less motivated by lectures and discussions.⁵⁵ Relatedly, we are interested in perceptions of other stakeholders regarding the development of student professionalism as a result of the DSC and over time. We plan to investigate these issues

further by interviewing and surveying clinical staff in order to understand their perspectives more clearly.

Conclusion

A dental scrubs ceremony is a useful addition to the formal curriculum of professionalism in a dental school. It provides dental students with an opportunity to be inducted into the dental profession and presents them with the idea that they are on a 'developmental journey'¹⁴ regarding their changing role and responsibilities as clinical students. Student feedback indicates that they enjoy the symbolic aspect of the ceremony, receiving their dental scrubs in a formal manner. However, there are mixed outcomes re: the learning of professionalism. While the DSC may be a weak vehicle for teaching professionalism, it is important to note that it is not intended to replace all professionalism teaching. Rather, its purpose is to act as a trigger event, raising students' awareness of their impending role change.

Conflicts of interest

The authors declare that there is no affiliation or involvement in an organisation or entity with a financial or non-financial interest in the subject matter or materials discussed in this manuscript.

References

1. Taylor C, Greey NJA, Checkland K. Professionalism . . . it depends where you're standing. *Br Dent J* 2017; 222(11): 889-892.
2. Zijlstra-Shaw S, Roberts TE, Robinson PG. Perceptions of professionalism in dentistry-a qualitative study, *Br Dent J* 2013; 215: E18, 1-6.
3. Coulehan J. Viewpoint: Today's professionalism: engaging the Mind but not the Heart. *Acad Med* 2005; 80(10): 892-898.
4. General Dental Council. Preparing for practice . 2015.
[file:///C:/Users/pn13182/Chrome%20Local%20Downloads/Preparing%20for%20Practice%20\(revised%202015\)%20\(6\).pdf](file:///C:/Users/pn13182/Chrome%20Local%20Downloads/Preparing%20for%20Practice%20(revised%202015)%20(6).pdf)
5. McLoughlin J, Zijlstra_Shaw S, Davies JR, Field JC. The Graduating European Dentist- Domain I: Professionalism, *Eur J Dent Ed* 2017;21(Supplement 1):11-13
6. Hawick L, Cleland J, Kitto S. Sending messages: How faculty influence professionalism teaching and learning. *Med Teach* 2017; 39(9): 987-994.
7. Zijlstra-Shaw S, Robinson PG, Roberts T. Assessing professionalism within dental education; the need for a definition, *Eur J Dent Educ* 2012;16(1), e128-e136.
8. O'Sullivan H, van Mook W, Fewtrell R, Wass V. Integrating professionalism into the curriculum: AMEE Guide no.61, *Med Teach* 2012;34(2), e64-e77.
9. Philip C, Philip C. The White Coat Ceremony: Turning Trust Into Entitlement. *Teach Learn Med* 2002; 14(1): 56-59.
10. Stern DT, Papdakis M. The Developing Physician- Becoming a Professional. *N Engl J Med* 2006; 355: 1794-1799.
11. The Arnold P Gold Foundation. The White Coat Ceremony, <http://www.gold-foundation.org/programs/white-coat-ceremony/>
12. Wear D. On White Coats and Professional Development: The Formal and Hidden Curricula. *Ann Intern Med* 1998; 129: 734-737
13. Glick SM. White Coat Ceremonies-another commentary. *J Med Ethics* 2003; 29: 367-367.

14. Karnieli-Miller O, Frankal RM, Inui T. Cloak of Compassion, or evidence of elitism? An empirical analysis of white coat ceremonies. *Med Educ* 2013; 47: 97-108.
15. Crossley J, Vivekananda-Schmidt P. The development and evaluation of a Professional Self-identity Questionnaire to measure evolving professional self-identity in health and social care students. *Med Teach* 2009; 31: e603-607.
16. Rabow MW, Remen RW, Parmelee DX, Inui T. Professional Formation: Extending Medicine's Lineage of Service in to the Next Century. *Acad Med* 2010; 85(2): 310-317.
17. Cruess SR, Cruess RC. Teaching professionalism-Why, What and How. *FVV in ObGyn* 2012; 4(4): 259-265.
18. Todhunter S, Cruess SR, Cruess RC, Young M, Steinert Y. Developing and Piloting a form for student assessment of faculty professionalism. *Adv Health Sci Educ Theory Pract* 2011; 16: 223-238.
19. Riley S, Kumar N. Teaching medical professionalism. *Clin Med* 2012; 92(1): 9-11.
20. Cruess RL, Cruess SR, Steinert Y. Amending Miller's Pyramid to Include Professional Identity Formation. *Acad Med* 2016; 91(2): 180-185.
21. Jarvis-Selinger S, Pratt DD, Regehr G. Competency is not enough: Integrating identity formation into the medical education discourse. *Acad Med* 2012; 87:1185-1190.
22. Cruess RL, Cruess SR, Boudreau JD, Snell L, Steinert Y. Reframing Medical Education to Support Professional Identity Formation. *Acad Med* 2014; 89(11): 1446-1451.
23. Cruess RL, Cruess SR, Boudreau JD, Snell L, Steinert Y. A Schematic Representation of the Professional Identity Formation and Socialization of Medical Students and Residents: A Guide for Medical Educators. *Acad Med* 2015; 89(11):1446-1451.
24. Hammond R, Cross V, Moore A. The construction of professional identity by physiotherapists: a qualitative study. *Physiother* 2016; 102: 71-77.
25. Arreciado Marañón A, Pera MPI. Theory and practice in the construction of professional identity in nursing students: A qualitative study. *Nurse Educ Today* 2015; 35: 859-863.
26. Veazey BJ, Bosk CC. Remaking surgical socialization: Work hour restrictions, rites of passage and occupational identity. *Soc Sci Med* 2012; 75: 1625-1632.
27. MacArthur BL, Dailey SL, Villagran MM. Understanding healthcare providers professional identification: The role of interprofessional communication in the vocational socialization of physicians. *J Interprof Educ Pract* 2016; 5: 11-17.
28. Mylrea MF, Sen Gupta T, Glass BD. Professionalisation in Pharmacy Education as a Matter of Identity. *Am J Pharm Educ* 2015; 79(9): Article 142.
29. Sherlock BJ, Morris RT. *Becoming a dentist*. Springfield: Thomas, 1972.
30. Eli I, Shuval JT. Professional Socialization in dentistry. A Longitudinal analysis of attitude changes among dental students towards the dental profession. *Soc Sci Med* 1982; 16: 951-955.
31. Eli I. 1984. Professional Socialization in dentistry: A Longitudinal analysis of changes in students' expected professional rewards. *Soc Sci Med* 1984; 18(4): 297-302.
32. Lopez N, Blue CM. Socialization of New Dental Hygienists on Entering the Profession. *J Dent Educ* 2011; 75(5): 626-632.
33. Goldberg JL. Humanism or Professionalism? The White Coat Ceremony and Medical Education. *Acad Med* 2008; 83(8): 715-722.
- .
34. Gilion R. White Coat Ceremonies for new medical students. *WJM* 2000; 173, Sept: 206-7.
35. Veatch RM. White Coat Ceremonies: a second opinion, *J Med Ethics* 2002; 28: 5-6.
36. Russell PC. The White Coat Ceremony: Turning Trust into Entitlement. *Teach Learning Med* 2002; 14(1): 56-69.

37. Bidwell JL, Robinson MW, de Grandville C, Santana E, Simpson E. White Coat Ceremony as a Professional Identity Formation Activity in a United States Family Medicine Residency Program. *J Med Educ Curric Dev* 2016; 3: 33-37.
38. Timmons S, East L. Uniforms, status and professional boundaries and in hospital. *Sociol Health Illn* 2011; 33(7): 1035-1049.
39. Cohen AP. *The Symbolic Construction of Community*. London: Routledge, 1985/2001.
40. British Psychological Society. *Ethics committee of the British Psychological Society*, Leicester: The British Psychological Society, 2009.
41. Becker HS, Geer B, Hughes EC, Strauss AL. *Boys in White: Student Culture in Medical School*. Chicago: University of Chicago Press, 1961.
42. Hafferty FW. Professionalism and the socialization of medical students. In: Cruess RL, Cruess SR, Steinert Y, eds. *Teaching Medical Professionalism*. New York, NY: Cambridge University Press, 2009:53-73.
43. Monrouxe LV. Identity, identification and medical education: Why should we care? *Med Educ* 2010; 44:40-49.
44. Bebeau MJ. Evidence based character development. In: Kenny N, Shelton W, eds. *Lost Virtue: Professional Character Development in Medical Education (Advances in Bioethics, Volume 10)*. Oxford, UK: Elsevier, 2006:47-87.
45. Bebeau MJ, Monson VE. Professional identity formation and transformation across the lifespan. In: McKee A, Eraut M, eds. *Learning Trajectories, Innovation and Identity in Professional Development*. Dordrecht, the Netherlands: Springer, 2012:135-162.
46. Bebeau MJ, Faber-Langendoen K. Remediating lapses in professionalism. In: Kalet A, Chou CL, eds. *Remediation in Medical Education: A Mid-Course Correction*. New York, NY: Springer, 2014:103-127.
47. Dreyfus SE. The Five-Stage Model of Adult Skill Acquisition, *Bull Sci Technol Soc* 2004; 24(3): 177-181.
48. Benner P. *From novice to expert: Excellence and power in clinical nursing practice*. Reading, MA: Addison-Wesley, 1984.
49. Birden HH, Usherwood T. 2013. "They liked it if you said you cried": how medical students perceive the teaching of professionalism. *Med J Aust* 2013; 199(6): 16 Sept: 406-409.
50. Cohn F, Lie D. Mediating the Gap between the White Coat Ceremony and the Ethics and Professional Curriculum. *Acad Med* 2002; 77(11):1168.
51. Rhodes R. Enriching the White Coat Ceremony with a Module on Professional Responsibilities. *Acad Med* 2001; 76(5): 504.
52. Cruess RL, Cruess SR, Snell L, Ginsburg S, Kearney R, Ruke V, Ducharme S, Sternszus, R. *Teaching, Learning and Assessing Professionalism at the Postgraduate level*. Members of the FMEC, PG Consortium, 2011.
53. Al-Eraky E. Twelve Tips for teaching medical professionalism at all levels of medical education. *Med Teach* 2015; 37(11): 1018-1025.
54. Twenge JM. Generational changes and their impact in the classroom: teaching Generation Me, *Med Ed* 2009; 43(5), 398-405.
55. Cilliers EJ. The Challenge of Teaching Generation Z. *PEOPLE: International Journal of Social Sciences* 2017; 3(1), 188-198.

